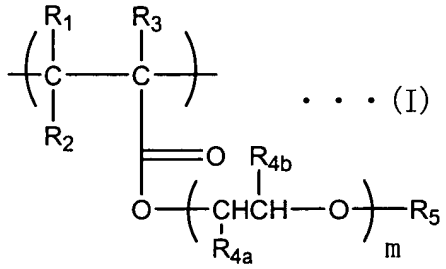
AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

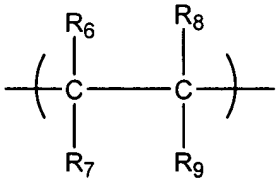
Listing of Claims:

Claim 1 (original): A solid polymer electrolyte comprising an electrolyte salt, and a copolymer in which a block chain A containing a repeating unit represented by a formula (I) shown below:



. . . (I)

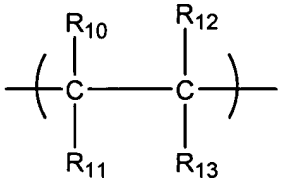
(wherein, R_1 to R_3 each represent, independently, a hydrogen atom or a hydrocarbon group of C1 to C10, R_1 and R_3 may be bonded together to form a ring, R_{4a} and R_{4b} each represent, independently, a hydrogen atom or a methyl group, R_5 represents a hydrogen atom, a hydrocarbon group, an acyl group, or a silyl group, m represents an integer from 2 to 100, and individual R_{4a} and R_{4b} groups are either identical or different), a block chain B containing a repeating unit represented by a formula (II) shown below:



. . . (II)

(wherein, R_6 to R_8 each represent, independently, a hydrogen atom or a hydrocarbon group of C1 to C10, and R_9 represents an aryl group), and a block chain C are arranged in a sequence B, A, C.

Claim 2 (original): A solid polymer electrolyte according to claim 1, wherein said block chain C contains a repeating unit represented by a formula (III) shown below:



$\cdots$ (III)

(wherein, R_{10} to R_{12} each represent, independently, a hydrogen atom or a hydrocarbon group of C1 to C10, and R_{13} represents an aryl group or a heteroaryl group).

Claim 3 (currently amended): A solid polymer electrolyte according to ~~either one of~~ claim 1 ~~and claim 2~~, wherein said block chains A to C form a copolymer with a B-A-C bonding sequence.

Claim 4 (currently amended): A solid polymer electrolyte according to ~~any one of~~ claim 1 ~~through claim 3~~, wherein a degree of polymerization of a repeating unit represented by said formula (I) is at least 10.

Claim 5 (currently amended): A solid polymer electrolyte according to ~~any one of~~ claim 1 ~~through claim 4~~, wherein a degree of polymerization of a repeating unit represented by said formula (II) is at least 5.

Claim 6 (currently amended): A solid polymer electrolyte according to ~~any one of~~ claim 2 ~~through claim 5~~, wherein a degree of polymerization of a repeating unit represented by said formula (III) is at least 5.

Claim 7 (currently amended): A solid polymer electrolyte according to ~~any one of the~~ claim 1 ~~through claim 6~~, wherein a value of m in said formula (I) is an integer from 5 to 100.

Claim 8 (currently amended): A solid polymer electrolyte according to ~~any one of~~ claim 1 ~~through claim 7~~, wherein a value of m in said formula (I) is an integer from 10 to 100.

Claim 9 (currently amended): A solid polymer electrolyte according to ~~any one of~~ claim 2 ~~through claim 8~~, wherein said group R_{13} in said formula (III) is an aryl group, and a degree of polymerization of a repeating unit represented by said formula (III) is at least 5.

Claim 10 (currently amended): A solid polymer electrolyte according to ~~any one of~~ claim 1 ~~through claim 9~~, wherein a molar ratio ((I)/((II)+C)) between repeating units represented by said formula (I), and a combined total of repeating units represented by said formula (II) and repeating units within said block chain C is within a range from 1/30 to 30/1.

Claim 11 (currently amended): A solid polymer electrolyte according to ~~any one of~~ claim 2 ~~through claim 9~~, wherein a molar ratio ((I)/((II)+(III))) between repeating units represented by said formula (I), and a combined total of repeating units represented by said formula (II) and repeating units represented by said formula (III) is within a range from 1/30 to 30/1.

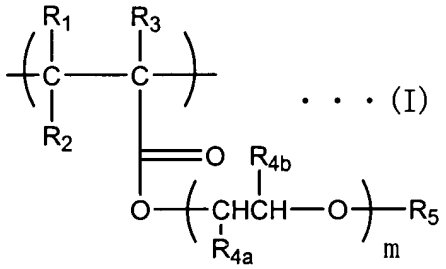
Claim 12 (currently amended): A solid polymer electrolyte according to ~~any one of~~ claim 1 ~~through claim 11~~, wherein a number average molecular weight of said copolymer is within a range from 5,000 to 1,000,000.

Claim 13 (currently amended): A solid polymer electrolyte according to ~~any one of~~ claim 1 ~~through claim 12~~, which exhibits a microphase separated structure.

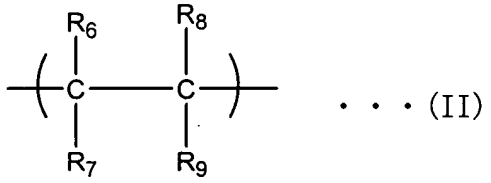
Claim 14 (currently amended): A solid polymer electrolyte according to ~~any one of~~ claim 1 ~~through claim 13~~, wherein said electrolyte salt is one or more materials selected from a group consisting of alkali metal salts, quaternary ammonium salts, quaternary phosphonium salts, transition metal salts, and protonic acids.

Claim 15 (currently amended): A solid polymer electrolyte according to ~~any one of~~ claim 1 ~~through claim 13~~, wherein said electrolyte salt is a lithium salt.

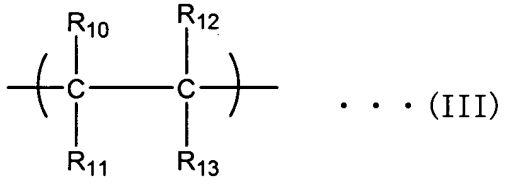
Claim 16 (original): A copolymer in which a block chain A containing a repeating unit represented by a formula (I) shown below:



(wherein, R_1 to R_3 each represent, independently, a hydrogen atom or a hydrocarbon group of C1 to C10, R_1 and R_3 may be bonded together to form a ring, R_{4a} and R_{4b} each represent, independently, a hydrogen atom or a methyl group, R_5 represents a hydrogen atom, a hydrocarbon group, an acyl group, or a silyl group, m represents an integer from 2 to 100, and individual R_{4a} and R_{4b} groups are either identical or different), a block chain B containing a repeating unit represented by a formula (II) shown below:



(wherein, R_6 to R_8 each represent, independently, a hydrogen atom or a hydrocarbon group of C1 to C10, and R_9 represents an aryl group), and a block chain C containing a repeating unit represented by a formula (III) shown below:



(wherein, R_{10} to R_{12} each represent, independently, a hydrogen atom or a hydrocarbon group of C1 to C10, and R_{13} represents an aryl group or a heteroaryl group) are arranged in a sequence B, A, C.

Claim 17 (original): A copolymer according to claim 16, wherein said block chains A to C are bonded together in a B-A-C sequence.

Claim 18 (currently amended): A copolymer according to ~~either one of~~ claim 16 ~~and claim 17~~, wherein a degree of polymerization of a repeating unit represented by said formula (I) is at least 10.

Claim 19 (currently amended): A copolymer according to ~~any one of~~ claim 16 ~~through claim 18~~, wherein a degree of polymerization of a repeating unit represented by said formula (II) is at least 5.

Claim 20 (currently amended): A copolymer according to ~~any one of~~ claim 16 ~~through claim 19~~, wherein a degree of polymerization of a repeating unit represented by said formula (III) is at least 5.

Claim 21 (currently amended): A copolymer according to ~~any one of~~ claim 16 ~~through claim 20~~, wherein a value of m in said formula (I) is an integer from 5 to 100.

Claim 22 (currently amended): A copolymer according to ~~any one of~~ claim 16 ~~through claim 20~~, wherein a value of m in said formula (I) is an integer from 10 to 100.

Claim 23 (currently amended): A copolymer according to ~~any one of~~ claim 16 ~~through claim 22~~, wherein said group R_{13} in said formula (III) is an aryl group, and a degree of polymerization of a repeating unit represented by said formula (III) is at least 5.

Claim 24 (currently amended): A copolymer according to ~~any one of~~ claim 16 ~~through claim 23~~, wherein a molar ratio ((I)/((II)+(III))) between repeating units represented by said formula

(I), and a combined total of repeating units represented by said formula (II) and repeating units represented by said formula (III) is within a range from 1/30 to 30/1.

Claim 25 (currently amended): A copolymer according to ~~any one of~~ claim 16 ~~through claim 24~~, wherein a number average molecular weight of said copolymer is within a range from 5,000 to 1,000,000.

Claim 26 (currently amended): A copolymer according to ~~any one of~~ claim 16 ~~through claim 25~~, which exhibits a microphase separated structure.

Claim 27 (currently amended): A method of producing a copolymer according to ~~any one of~~ claim 16 ~~through claim 26~~, which utilizes a living radical polymerization in which a transition metal complex is used as a catalyst, and an organohalogen compound comprising 1 or more halogen atoms is used as an initiator.

Claim 28 (original): An ion conductive film containing a polymer comprising a polymer segment (P1) that displays ionic conductivity and a polymer segment (P2) that displays no ionic conductivity, wherein said film exhibits a network-type microphase separated structure.

Claim 29 (original): An ion conductive film according to claim 28, wherein said polymer comprising P1 and P2 is a polymer in which said segments are arranged in a P2, P1, P2 sequence.